B. Amendments to the Specification.

Please replace the paragraph beginning on page 2, line 13 with the following amended paragraph:

Use of proper lifting technique and shoveling at a slower, steady pace can greatly reduce the risk of injury while shoveling. For example, in lifting a loaded shovel, the shoveler should bend his or her knees while lifting with the legs and not with the back. Excessive twisting, bending or throwing snow over the shoulder should be avoided to prevent spinal injury, as the spine can tolerate almost any ~~almost any~~ other movement more easily than twisting. Stepping in the direction the snow is being thrown will also prevent some twisting. In addition, smaller shovel loads should be lifted rather than heavy or full shovel loads. Frequent breaks should be taken, and the lower back should be extended either by walking around or doing extension exercises by placing one's hands on the back of his or her hips and bending forward slightly for several seconds, and then bending backward also for several seconds.

Please replace the paragraph beginning on page 2, line 25 with the following amended paragraph:

Despite such precautions, which are not taken by most or even many shovelers, muscle fatigue, low back strain, vertebral disc damage, and even spinal fractures occur during the winter season, caused either by excessive stress to spinal structures and others by slip and fall accidents. Thus, since most of such shoveling injuries occur as a result of lifting and throwing or dumping loads of snow, an even better solution to preventing injuries to one's back or other muscles is to push the snow to the grassy area beside a sidewalk or driveway instead of lifting and throwing it. Some back injuries occur due to the fact that the shaft of the shovel is too short, which causes the back to bend more to lift the load, or by using a shovel with a shaft that is too long, the resulting excessive leverage effectively making the weight at the end relatively heavier. In

addition, several shovels today have curved shafts or handles which enable the user to keep his or her back straight or straighter while lifting and reduce the amount of bending required during use. Such curved shaft shovels, however, in general place even more stress on the body if the snow has to be lifted up to or over a pile of previously collected snow or other barrier. Other snow handlers choose to do away with manual shoveling altogether, and instead use a snow blower. However, while snow blowers do in fact eliminate lifting of snow, they are quite expensive to purchase and maintain, and can be dangerous if not used or cleaned correctly. In fact, hand injuries caused by cleaning out a snow blower by hand are quite common, despite repeated warnings. Snow blowers, furthermore, are inefficient with heavy wet snow, which is also the most difficult to move by means of a shovel.

Please replace the paragraph beginning on page 4, line 25 with the following amended paragraph:

The present inventor has conceived of a novel snow shoveling device wherein all of the lift required in lifting a load of snow comes from a unique first class lever arrangement in which the handle of the shovel serves as the fulcrum support. As a result, little or no physical exertion other than pushing the shoveling device across the area to be cleaned and pushing downwardly on the lever mechanism with one's body weight, preferably by the use of the large leg muscles rather than the relatively smaller arm muscles, is required. In addition, once the load is lifted, such load is easily released from the shoveling blade again with only minimal physical strain or exertion when compared to the large strain on the heart and muscles in shoveling using a regular hand shovel. Even more important in the present invention, however, is that instead of the weight of the snow or other congealed precipitation being supported during lifting by the articulated cervical column of the shoveler of the snow, the weight of the snow is supported by the much more durable and damage resistant handle of the

shovel which rests upon the underlying surface from which the snow is being removed during lifting and the downward force is applied as indicated to the leveraged shovel blade not by the relatively weak muscles of the arms, but by the considerably more powerful muscles of the legs or one leg, further removing stress from the spine, since the legs of the human torso are articulated into the hips below the spine. The only stress to the spine, therefore, is the relatively low stress of maintaining the shovel handle upright upon the surface from which snow is being removed, and even this stress comprises only a relatively low sidewise force effective to maintain the shovel handle essentially upright. Furthermore, even this low stress can be partially alleviated by providing multiple point, such as four point, bottom contact of the shovel handle with ground surface. The actual dumping of snow from the shovel blade once it is elevated can be effected in several different ways, as will be explained, such as overbalancing of the shovel blade and the use of push rod means to rotate the blade.

Please replace the paragraph beginning on page 5, line 29 with the following amended paragraph:

One common device is the addition of an auxiliary handle to a shovel normally having a single gripping area on the upper end of the regular handle. For example, U.S. PAT. NO. 584,827 issued to B.F. McIndoo on June 22, 1897, entitled "Shovel," is an early example of a shovel having an auxiliary handle pivotably connected to the lower end of the regular handle. To lift a load, the auxiliary handle is swung forwardly where it is held by a pawl and rack arrangement. When the load is ready to be pitched off the shovel blade, the pawl is disengaged from the rack and the auxiliary handle is allowed to naturally swing backwards toward the ~~other~~ upper end of the regular handle. In U.S PAT. NO. 4,198,090 issued to D. Gutman on April 15, 1980, also entitled "Shovel," teaches a shovel having an adjustable lever situated partway along the handle portion of the shovel and a secondary handle member connected to the upper handle portion of

the shovel. Gutman also utilizes a lever mechanism to aid in initially lifting a load on the scoop member; however, considerable lifting and strain is still required to support and dump the load.

Please replace the paragraph beginning on page 9, line 1 with the following amended paragraph:

In U.S. PAT. NO. ~~5,569,651~~5,669,651 issued to A. Vroegindewey on September 23, 1997, entitled "Shovel With Lift Aid Attachment," a cambered foot pedal attachment is pivotably connected extending rearwardly from the lower end of the handle shaft which when stepped on by the user urges the shovel blade to be raised upwardly by lever action. Also, an auxiliary handle on the forward end of the lever is used to help throw snow off of the shovel blade. At some point, however, the full weight of snow still must be supported by the user.

Please replace the paragraph beginning on page 11, line 22 with the following amended paragraph:

U.S. PAT. NO. ~~3,125,951~~4,125,951 issued to A.W. Huerth on November 21, 1978, entitled "Snow Removal Device," discloses another snow scoop or pusher wherein a main body member is connected to a shovel blade portion having raised side walls, plus a handle means. Snow is piled up in the device by pushing it forwardly along the ground with the handle, while the snow is removed from the blade by rapidly decelerating the blade so that the snow is thrown forward. The Huerth device is thus an example of a device designed especially for using accumulated momentum along a surface to propel snow to a specific resting location on such surface.

Please replace the paragraph beginning on page 15, line 7 with the following amended paragraph:

It is a further object of the present invention to provide a snow removal device that may be used to easily manually push or plow quantities of snow on a surface onto a snow pusher blade and then to lift such snow and deposite it in a desired location.

Please replace the paragraph beginning on page 24, line 29 with the following amended paragraph.

If it is desired to move the shovel while supporting the end of the handle upon the ground, the end of the handle is ~~preferable~~ preferably supplied with slide means such as small sled-type runners or more preferably by small wheels placed so that by adjusting the angles of the handle with respect to upright, it can be rested directly and essentially immovably upon the ground or can be adjusted in angle so that runners or slides or more preferably small wheels can be supported upon the ground or other support surface enabling the entire shovel structure to be moved bodily along the surface.

Please replace the paragraph beginning on page 25, line 25 with the following amended paragraph:

In the preferred version of the snow removal apparatus of the invention, the shovel is not only provided with a pivot arm supporting the shovel blade, but the shovel blade is pivoted more or less centrally upon the end of the pivot arm in such a manner that the blade may be either held more or less rigidly upon the pivot arm or allowed to pivot from a more or less horizontal position to a vertical position or even more than a vertical position to dump or discharge snow from the blade into a deposit area. In the simplest version of such embodiment, the shovel blade is provided with a locking arrangement that holds it rigid on the pivot arm or arms when gathering snow or in shoveling or plowing mode, but is disconnectable or unlockable when the blade is

brought over a snow deposit area, whereupon the blade is unlocked and because of its pivot point will ~~rotated~~ rotate into a vertical or more than vertical position and dump its snow from it into the deposit area, whereupon the shovel blade may be pushed or kicked up into a locked position again and moved to gather another load of snow.

Please replace the paragraph beginning on page 28, line 3 with the following amended paragraph:

FIGS. **1** through **7** illustrate a first preferred embodiment of the invention, FIGS. **8** through **11** illustrate alternative embodiments, ~~and~~ FIGS. **12** through **15** illustrate another alternative embodiment that enables the shovel blade used in the invention to be converted to more traditional use, and FIGS. 16-23 illustrate further alternative embodiments. Referring first to FIGS. **1** through **7**, the numeral **10** generally represents the snow removal device of the invention. In its most basic form, device **10** is comprised of an elongated double support shaft **20**, or handle, which serves as a combination handle and ground-engaging fulcrum, material handling blade or scoop **30**, and foot activated lever or lifting mechanism **40**.

Please replace the paragraph beginning on page 28, line 12 with the following amended paragraph:

Referring more specifically now to FIG. **1**, in the presently described embodiment of the elongated support shaft **20** such shaft is bifurcated and as such is comprised of first and second shaft sections **21a** and **21b**, which sections are substantially mirror images of each ~~another~~other. ~~Shaft **20**~~ First and second shaft sections **21a** and **21b** each have~~has~~ an elongated upper shaft portion **22**, a central portion **23**, and a lower shaft portion **24**. Upper shaft portion **22** is generally straight along its entire length, while central portion **23** is also straight but could be cambered downwardly somewhat towards the ground surface so that lower shaft portion **24** would be substantially perpendicular to such ground surface as shown in the embodiments depicted in FIGS. **8**

and **9**. Transverse handle grip members **25a** and **25b** are connected to the upper ends of shaft sections **21a** and **21b**, although alternatively and possibly preferably such handle grip members **25a** and **25b** are formed integrally with shaft **20**. Handle grip members **25a** and **25b** are of course used to handle and maneuver the snow removal device **10** as described in more detail below. Shaft sections **21a** and **21b** are preferably tubular and made from a strong yet lightweight metal material such as aluminum. As shown in FIGS. **1**, **4**, and **6**, lower portions **24** of first and second sections **21a** and **21b** curve outwardly and then downwardly so that a solid base for pivoting and lifting the shovel blade as described below results. Ground-engaging end pieces **27** preferably made from a non-skid material such as rubber may be attached to the ends of lower shaft portions **24** ~~so that~~to prevent the device **10** ~~does not slip~~ from slipping during lifting of the shovel blade **30**. When device **10** is in position for shoveling, end pieces **27** should be situated a few inches or fractions of an inch off the ground so that shaft **20** normally will not contact the ground and interrupt the pushing or shoveling movement but will glide supported on wheels **28**, which, as mentioned above, could be replaced by skids or runners. In addition, while shaft **20** is described above as being comprised of two sections **21a** and **21b**, it should be understood that shaft **20** could be comprised of a single shaft section. More rigidity with less weight will usually be obtained from use of a double or multiple construction, however.

Please replace the paragraph beginning on page 29, line 11 with the following amended paragraph:

The blade **30** used with the snow removal device **10** of the present invention is preferably molded out of a durable plastic such as ~~PVS~~PVC, although any other suitable material such as steel, or aluminum or an aluminum and/or magnesium alloy may also be used. Blade **30**, best shown in FIGS. **1** and **2**, is preferably generally rectangular in plane and slightly or somewhat curved in cross-section, and includes front and rear sides **31** and **32**, top edge **33**, ground engaging lower edge **34**, and side edges **35**.

Although blade **30** may be in various sizes, in one embodiment blade **30** has a width of approximately thirty-two inches and a height of approximately twenty-four inches. Lower edge **34** may also be slightly curved or concave if desired, and blade **30** may also have shallow or low side walls **35a** or be somewhat more cup or scoop-shaped to prevent material from slipping off sides of the blade during filling or lifting of the blade as described below.

Please replace the paragraph beginning on page 29, line 23 with the following amended paragraph:

As best shown particularly in FIGS. **1** and **7**, mounted ~~on~~ to rear side **32** of blade **30** are pairs of frame pieces or bracket members **36-37** and **38-39** which pairs are spaced horizontally centrally from one another. Bracket members **36-37** and **38-39** are preferably integrally molded with blade **30** if the blade is of a plastic composition, although they may also be separately secured such as by rivets or bolts or welding, particularly if the blade is metallic, and serve as receiving members for pivotably connecting blade **30** directly to lever mechanism **40** and ultimately to handle shaft **20**. In addition, blade **30** should be separable from lever mechanism **40** so that it may be replaced if necessary due to wear, or so that a slightly larger or smaller blade or a blade having a different curvature may be used if desired. As explained later, the blade **30** may also be separated from the mechanism of the invention and a conventional handle applied. The blade is secured to the pivot arm **40** by means of removable pivot or cotter pins **39a**.

Please replace the paragraphs beginning on page 30, line 20 and page 30, line 30 with the following amended paragraph:

As shown best in FIGS. **4** and **6**, foot engaging member or stirrup **60** serves as the actuating means for lever mechanism **40**. Stirrup **60** as shown is generally rectangular in shape with a forwardly ~~slightly~~ inclined upper ~~sides~~ end and ~~has~~ is

provided with a lower foot contacting surface or lower end **61**, ~~and two~~ substantially parallel side members **63a** and **63b** extending upwardly and then ~~over or~~ inwardly to upper end **62** where inclined pivot supports **64** pivotally connect stirrup **60** to the pivot arm **40**. Stirrup **60** is shown in FIGS. **1**, **2**, and **3** folded upwardly against the pivot arm **40** where it will normally be out of the way during plowing or collection of snow with blade **30**, while stirrup **60** is shown downwardly dependent in the position it will assume as the shovel is lifted and dumped from a raised position in FIGS. **4**, **5**, **6**, and **7**.

~~Stirrup **60** is provided with foot contact surface or lower end **61**, rearward or upper end **62**, side surface **63**, and inclined pivot supports **64**.~~ Upper ends **43** of arms **41** and **42** are pivotably connected to stirrup pedal **60** along upper end **64**, while the outer ends **47** of the two sections **45** and **46** of pivot arm **40** are pivotably connected preferably to brackets **37**.

Please replace the paragraph beginning on page 31, line 6 with the following amended paragraph:

The pivot arm **40** comprised of closely spaced arm sections **41** and **42** and diverging sections **45** and **46** is maintained ordinarily in a downward position by gravity and will be maintained in any raised position assumed or to which it is brought by ratchet wheel mechanism **75**, which, however, can be released by operation of control arm **77** through rod or cable linkage **79**. As a result of such ratchet linkage the blade **30** will normally rest upon the ground surface unless it is deliberately lifted at least one ratchet width by movement either of the pivot or fulcrum arm **40** or by riding over something on the ground which may lift the shovel blade at least one ratchet height. If it is desired to press the blade forcefully against the ground surface, the user can pull upwardly upon the end of the pivot arm **40** while, if necessary, disengaging the ratchet mechanism by operating or pulling the ratchet release handle **77**. If the blade **30** is deliberately raised to lift a load of congealed precipitation, i.e. snow, the ratchet wheel

mechanism will retain the blade at whatever position it is raised to. However, if it is desired to lower the pivot arm together with the shovel blade such as, for example, after snow has been dumped from the shovel blade, operation of the ratchet control arm **77** will through linkage **79** in a conventional manner release the ratchet mechanism **75** and allow the blade **30** to return to ground level or wherever the operator wishes to position it.

Please replace the paragraph beginning on page 31, line 25 with the following amended paragraph:

The shovel blade **30** is pivoted at brackets **36** and **37** such that more of the blade and any load supported upon it will be positioned in front of or beyond the brackets than behind such brackets. Thus, if the blade is not locked in place by the locking mechanism **80** it will be overweighted and will rotate to a vertical position dumping any snow accumulated upon it. The locking arrangement **80** shown in outline comprises a conventional spring loaded bifurcated rocking arm mechanism **81** having a first control arm **81a** and a second locking arm **81b** (see in particular FIG. 7) which are pivoted together on a base pivot **83**. The bifurcated mechanism is pivoted on its base and spring biased toward the outer end of the pivot arm **40** so that the locking arm is normally interlocked through slot **81c** with a pin **81d** extending between bracket pieces **38** and **39** (see FIG. 1). So long as the rocker arm **81** is rocked forward with second locking arm **81b** and slot **81c** locked onto or over the pin **81d** the shovel blade will be retained in the position shown in FIGS. 1, 3 and 4. However, by operation of locking lever **85** on the left handle **25a** of the shovel a wire connection **87** between such lever and control arm **81a** will retract locking ratchet mechanism arm **81b** backward displacing the slot in locking arm **81b** from over pin **81d** and releasing blade **30** to rotate downwardly to dump any snow held upon such blade.

Please replace the paragraph beginning on page 33, line 29 with the following amended paragraph:

As will be evident particularly in FIGS. **1**, **3** and **7** the pivot arm **40**, which may be, as shown best in FIG. **1**, of multiple side by side member construction, ~~and~~ has a bent configuration in which the upper sections **41** and **42** extends at a somewhat different angle from the lower sections **45** and **46**. Otherwise the central pivot point on the handle **20** would tend to be too low to allow the shovel blade to be efficiently lifted high enough to place snow on earlier piled snow. It may be desirable to include a small handle, not shown, at the end of the pivot arms **41** and **42** for auxiliary control of the pivot arm in handling the shovel, the lifting force, however, still being applied by the foot of the user pressing down in the stirrup **60**.

Please replace the paragraph beginning on page 35, line 8 with the following amended paragraph:

As more particularly shown in FIGS. **8** and **10**, a shovel user may begin shoveling or plowing of snow with the ground contacting insert **27a** essentially flat on the ground surface and the wheel or wheels of the handle just off the ground. If it is desired to pass the shovel blade over the ground in a more nearly horizontal position or to rest the wheels **28** on the ground the handle **20a** may be tipped back a little farther so the weight of the shovel and any snow held thereon rests on the said wheels **28** mounted on the bottom of the handle by wheel mounting bracket **67**. When the shovel is brought opposite a disposal area the handle **20a** may be brought to a more vertical orientation as shown in FIG. **9** and the foot of the operator placed in the stirrup **60a** to raise the pivot arm **40a** as shown. Unlocking upper portion of the shovel blade **30a** from the pivot are **40a** will then allow the blade **30a** to rotate as shown in FIG. **10**, or even farther, dumping any snow accumulated on the blade from the blade. If the snow is wet and tends to adhere or stick to the blade **30a** the handle **20a** can be shaken or sharply

rocked frontward and backward to shake or jar the snow from such blade. Since the full weight of the shovel and any accumulated snow is supported upon the end of the handle as shown in FIG. **10** there is little or no stress or weight applied to the back or vertebral column of the shoveler. The sequence of pushing or plowing snow followed by lifting it and then dumping the snow is shown in time lapse sequence form in FIG. **11** progressing from the lower left of the figure to the upper right of the figure. It will be noted that the first two time lapse positions of the series of time lapse representations of the shovel of the invention are very nearly the same, except that the shovel blade is slightly more extended in the second time lapse view. In both initial time lapse sequences it should be understood that if the shovel is being moved on the wheels **28** the shovel handle **20a** will be tipped or inclined to the rear sufficiently to cause the wheels **28** to contact or be supported by the ground surface.

Please replace the paragraph beginning on page 36, line 4 with the following amended paragraph:

FIGS. ~~12~~ 14 and ~~13~~15, as indicated above, show in broken apart format and list the various component parts of the embodiment of the shovel shown in the FIGS. **8** through ~~11~~ 13 with the Table of FIG. ~~13~~ 15 listing such parts by sequential number and names of the construction parts. The reference numerals of the broken apart showing of FIG. ~~12~~ 14 are the sequential numerals of the parts list of the Table of FIG. ~~13~~ 15 and not the operational numerical representations of FIGS. **8** through ~~11~~ 13 which conform, where similar, to the reference numerals of FIGS. **1** through **7** showing the first embodiment of the invention.

Please replace the paragraph beginning on page 36, line 19 with the following amended paragraph:

As shown in FIG. **16**, a shovel device ~~20a~~ 10a in accordance with the invention has in this case a support shaft **20a** having a curved handle member **21c** with ground

contact end piece **27a** and wheel **28a** held on a wheel mount **67** attached to the lower portion of the curved handle **21c** which as may be seen is particularly curved in the central section **21ca** of such handle. A shovel blade **30a** is pivoted to the end of a pivot or fulcrum arm **40a** thereby establishing a base or fulcrum on which blade **30a** may be pivoted upwardly. Preferably there will be two fulcrum arms **40a** designated here as arms **41a** and **42a** preferably pivotably mounted on opposite sides of the handle **21c** or, if the handle is itself of double construction, the pivot arms **41a** and **42a** will be on the two handle sections. ~~As shown in FIG. 8, to~~To lift blade **30a**, the user places his or her foot on the foot pedal **61** and applies an even downward force thereon, the force being applied mainly directly to the front section **61a** where the pivot arms **41a** and **42a** are rotatably pivoted with it. As such force is applied, arm **41a** and **42a** will pivot on pivot point **48** with handle **21c**, with the upper ends of arms **41a** and **42a** pivoting downwardly and the lower ends of such arms pivoting upwardly so that blade **30a** is lifted off the ground surface. The loaded scoop or blade **30a** thus is lifted with only minimal exertion or strain on the body of the user. In fact, the user's body weight on the foot pedal is all that is normally required to lift the load, and only minimal or no further stress is applied on the user's back, shoulders, or arm muscles and/or joints in contrast to what is typically experienced when manually lifting a loaded shovel blade or scoop. The user has therefore replaced a second and third grade lever system, i.e. the combination body and regular shovel handle lifted by the arms, with a first grade lever having a fulcrum point between the load and the lever and operated by the strong muscles of the legs or one leg. In addition, rather than the load being supported by the vertebral column of the shoveler, the load is supported by the handle of the shovel.

Please replace the paragraph beginning on page 40, line 22 with the following amended paragraph:

FIGS. **20** through **23** show how the shovel blade **30** of the invention may, if desired, be removed from its regular handle and associated pivoting lifting arm and a regular or conventional shovel handle attached to such blade for use as a conventional shovel in a conventional mode. In FIG. **20** there is shown a right rear quadrant isometric view of the shovel blade **30a** used in the embodiments of the invention shown in FIGS. **16** and **17**. It should be understood, however, that a conventional shovel handle supplied with appropriate attachment means could be used with the shovel blades shown in FIGS. **1** to **7** or in FIGS. **18** and **19**. In FIG. **20** the back of the shovel blade is provided with brackets **125** and **126** in the form of modified channel members having opposed flanges **125a**, **125b** and **126a**, **126b**. Two other smaller channel sections **128** and **129** are supplied on the top portion of the back of the shovel blade. These channel brackets **125a** and **126a** are normally used for movable connection of the pivot rods **41a** and **42a** which are secured by suitable pins to the brackets. Likewise, the brackets **128** and **129** are normally secured by suitable pins to the push rods **65** and **66**. As shown in FIG. ~~13~~**21**, a handle **135** is provided with a split or bifurcated lower and **136** and **137** and openings in lower narrow sections **144** and **145** which are adapted to slide into the modified channel brackets **125** and **126** and be locked or held therein by pins **151** and **152**. A further curved rod **155** is adapted to slide through opening **157** in bracket **158** on the front of the handle **135**.

Please replace the paragraph beginning on page 41, line 12 with the following amended paragraph:

As will be understood from reference to the FIGS., when it is desired to use the shovel blade in a conventional manner, it can be separated from the handle **20** or **20a** of

the invention by removing the pins from the brackets on the shovel blade and replacing such handle by the conventional handle as shown in FIGS. ~~13~~21, ~~14~~ 22 and ~~15~~23. The conversion only takes a few moments and facilitates double duty for the shovel blade. The arrangement also allows the shovel blade, particularly when made from a plastic material which may wear over an extended period, to be easily and quickly replaced on the mechanical handle of the invention even though the use of a conventional handle may not be desired.